ADB Airfield Solutions

User Manual

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ETL Certified to FAA Specification

AC 150/5345-46 (current version)

L-862 (Quartz) High Intensity Elevated Runway Edge and L-862E Threshold/End Light (Pop Top) Light

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TABLE OF CONTENTS

L-862 (Quartz) High Intensity Elevated Runway Edge and L-862E Threshold/End Light (Pop Top) Light
i

1.0: Safety 1

1.1 :To use this equipment safely: 1
1.1.1 :Additional Reference Materials: 1
1.1.2 :Qualified Personnel 1
1.1.3 :Intended Use 1
1.1.4 :Storage 1
1.1.4.1 :Operation 2
1.1.4.2 :Material Handling Precautions 2
1.1.4.3 :Action in the Event of a System or Component Malfunction 2
1.1.4.4 :Maintenance and Repair 2

2.0: L-862 Quartz Elevated Pop Top Light 3

2.1 :About this manual 3
2.1.1 :How to work with the manual 3
2.1.2 :Record of changes 3
2.1.3 :Icons used in the manual 3
2.2 :Introduction 4
2.2.1 :L-862 Runway Edge Light Fixture: Required Equipment 5
2.2.2 :Specifications 6
2.2.2.1 :Compliance with Standards 6
2.2.2.2 :Uses 6
2.2.2.3 :Features 6
2.2.2.4 :Wind 6
2.2.2.5 :Altitude 6
2.2.2.6 :Operating Conditions 6
2.2.3 :Photometric Data 6
2.2.3.1 :Lamp 6
2.2.3.2 :Minimum Beam Coverage L-862 6
2.2.3.3 :Minimum Beam Coverage L-862E 6
2.2.3.4 :Minimum Average Intensity 6
2.2.3.5 :Lamp Current and Percent Brightness 6
2.2.3.6 :Packaging 7
2.3 :Pre-Installation 8
2.3.1 :Unpacking 8
2.3.2 :Assembly Instructions 8
2.4 :Installation 9
2.4.1 :Placement 9
2.4.2 :L-862 Base Mounting 9
2.4.3 :L-862E Base Mounting 9
2.4.4 :Light Fixture Mounting 11
2.4.4.1 :Leveling and Aiming Light Fixture 13
2.4.4.2 :Stake Mounting 13
2.4.4.3 :Stake Installation 15
2.5 :Maintenance 16
2.6 :Troubleshooting 17
2.6.1 :Repair 17
2.6.1.1 :Lamp Replacement 17
2.6.1.2 :Inner Lens Replacement 18
2.7 :Parts 19

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Table of Contents

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1.0 Safety

This section contains general safety instructions for installing and using ADB Airfield Solutions equipment. Some safety instructions may not apply to the equipment in this manual. Task- and equipment-specific warnings are included in other sections of this manual where appropriate.

1.1 To use this equipment safely:

WARNING

Read installation instructions in their entirety before starting installation.

- Refer to the FAA Advisory Circular AC 150/5340-26, Maintenance of Airport Visual Aids Facilities, for instructions on safety precautions.
- Observe all safety regulations. To avoid injuries, always disconnect power before making any wiring connections or touching any parts. Refer to FAA Advisory Circular AC 150/5340-26.
- Become familiar with the general safety instructions in this section of the manual before installing, operating, maintaining or repairing this equipment.
- Read and carefully follow the instructions throughout this manual for performing specific tasks and working with specific equipment.
- Make this manual available to personnel installing, operating, maintaining or repairing this equipment.
- Follow all applicable safety procedures required by your company, industry standards and government or other regulatory agencies.
- Install all electrical connections to local code.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Protect components from damage, wear, and harsh environment conditions.
- Allow ample room for maintenance, panel accessibility, and cover removal.
- Protect components from damage, wear, and harsh environment conditions.
- Allow ample room for maintenance, panel accessibility, and cover removal.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning prior to returning power to the circuit.

1.1.1 Additional Reference Materials:

- NFPA 70B, Electrical Equipment Maintenance.
- NFPA 70E, Electrical Safety Requirements for Employee Workplaces.
- ANSI/NFPA 79, Electrical Standards for Metalworking Machine Tools.
- OSHA 29 CFR, Part 1910, Occupational Health and Safety Standards.
- National and local electrical codes and standards.

1.1.2 Qualified Personnel

The term **qualified personnel** is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations and have been trained to safely install, operate, maintain and repair the equipment. It is the responsibility of the company operating this equipment to ensure that its personnel meet these requirements.

Always use required personal protective equipment (PPE) and follow safe electrical work practices.

1.1.3 Intended Use

WARNING

Using this equipment in ways other than described in this manual may result in personal injury, death or property and equipment damage. Use this equipment only as described in this manual.

ADB Airfield Solutions cannot be responsible for injuries or damages resulting from nonstandard, unintended applications of its equipment. This equipment is designed and intended only for the purpose described in this manual. Uses not described in this manual are considered unintended uses and may result in serious personal injury, death or property and equipment damage. Unintended uses may result from taking the following actions:

- Making changes to equipment that are not recommended or described in this manual or using parts that are not genuine ADB Airfield Solutions replacement parts.
- Failing to make sure that auxiliary equipment complies with approval-agency requirements, local codes and all applicable safety standards.
- Using materials or auxiliary equipment that are inappropriate or incompatible with ADB Airfield Solutions equipment.
- Allowing unqualified personnel to perform any task.

1.1.4 Storage

CAUTION

If equipment is to be stored prior to installation, it must be protected from the weather and kept free of condensation and dust.

Failure to follow this instruction can result in injury or equipment damage.

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1.1.4.1 Operation

WARNING

- Only qualified personnel, physically capable of operating the equipment and with no impairments in their judgment or reaction times, should operate this equipment.
- Read all system component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.
- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Never operate equipment with a known malfunction.
- Do not attempt to operate or service electrical equipment if standing water is present.
- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Never touch exposed electrical connections on equipment while the power is ON.

1.1.4.2 Material Handling Precautions

CAUTION

This equipment may contain electrostatic sensitive devices.

- Protect from electrostatic discharge.
- Electronic modules and components should be touched only when this is unavoidable e.g. soldering, replacement.
- Before touching any component of the cabinet you should bring your body to the same potential as the cabinet by touching a conductive earthed part of the cabinet.
- Electronic modules or components must not be brought in contact with highly insulating materials such as plastic sheets, synthetic fiber clothing. They must be laid down on conductive surfaces.
- The tip of the soldering iron must be grounded.
- Electronic modules and components must be stored and transported in conductive packing.

1.1.4.3 Action in the Event of a System or Component Malfunction

WARNING

- Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.
- Disconnect and lock out electrical power.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual.

1.1.4.4 Maintenance and Repair

WARNING

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks.

- Only persons who are properly trained and familiar with ADB Airfield Solutions equipment are permitted to service this equipment.
- Disconnect and lock out electrical power.
- Always use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in the product manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Connect all disconnected equipment ground cables and wires after servicing equipment. Ground all conductive equipment.
- Use only approved ADB Airfield Solutions replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.
- Check interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Use caution when servicing electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with electrical equipment.

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2.0 L-862 Quartz Elevated Pop Top Light

L-862 and L-862E (Quartz) High Intensity Elevated Runway Edge and Threashold/End Light (Pop Top) user's manual.

This manual describes the L-862 runway edge and L-862E runway threshold/end lights. The ADB Airfield Solutions L-862 runway edge light is used to delineate the edges of precision IFR runways.

2.1 About this manual

The manual shows the information necessary to:

- Install and maintain the L-862 (Quartz) and L-862E High Intensity Elevated Runway (Pop Top) Light.

NOTE: Refer to catalog sheet 1012. for further infomation.

2.1.1 How to work with the manual

1. Become familiar with the structure and content.
2. Carry out the actions completely and in the given sequence.

2.1.2 Record of changes

8, 9, 29, 30, 34-36	K	Added 115 W lamp to Table 4. Added red color lens lamp intensity to Table 5. In Figure 10 ordering code, designated yellow-yellow and red-green lens colors as not FAA recognized, changed clear-red lens color as FAA recognized, and added 115 W lamp. Added 115 W lamp to parts list and spare parts. Changed "Not FAA approved" to "Not ETL certified". Added lens cap assembly to lens assembly parts list and to Figure 13.	01087	JY	WT	6/3/03
Table 4, pgs 8,30,31, 37	L	Removed ref & part number of 175W lamp	01588	WT	WT	4/24/06
All	M	Updated manual to current format and updated parts and specs				1/17/13
	N	Updated Warrantee				3/22/13

2.1.3 Icons used in the manual

For all WARNING symbols see the Safety section.

Carefully read and observe all safety instructions in this manual, which alert you to safety hazards and conditions that may result in personal injury, death or property and equipment damage and are accompanied by the symbol shown below.

WARNING

- Failure to observe a warning may result in personal injury, death or equipment damage.

CAUTION

- Failure to observe a caution may result in equipment damage.

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2.2 Introduction

The L-862/L-862E light fixture is available with these options

Ordering Code **44C1201-XXXX**

Lamp
1 = 120 W/6.6 A Quartz (ETL Certified)
2 = 150 W/6.6 A Quartz[1,4]
4 = 200 W/6.6 A Quartz[1,4,5]

Inner Lens Color
1 = Bidirectional White/White (ETL Certified)[4]
2 = Bidirectional White/Yellow (ETL Certified)
3 = Red
5 = Green[2]
7 = Bidirectional Red/Yellow
8 = Bidirectional Green/Yellow

Fixture Height
1 = 14 in (35.6 cm) with 1.5" coupling, 12 TPI
2 = 24 in (61.0 cm) with 1.5" coupling, 12 TPI
3 = 30 in (76.2 cm) with 1.5" coupling, 12 TPI

Outer Lens Option
1 = White Toed[3]
2 = Obscured – Left Toed
3 = Obscured – Right Toed
4 = Red/Green – Right Toed[4]
5 = Red/Green – Left Toed[4]
6 = Green/Obscured – Right Toed[2]
7 = Green/Obscured – Left Toed[2]
8 = Red

Notes
[1] Wattage not submitted for ETL certification, but exceeds specifications for photometric requirements
[2] Green inner lens in combination with green/obscure outer lens used on L-862E unidirectional green applications.
[3] When ordering fixtures with white/white or white/yellow inner lens colors, indicate the number of fixtures to be toed left and the number to be toed right. Unless specified, order will be filled with half right toed and half left toed fixtures.
[4] For red/green applications, inner lens must be white/white and outer lens must be red/green
[5] For 200 W lamps, inner lens must be either white or yellow.

Figure 1: L-862/L862E Light Fixture

The fixture emits light that is colored 180 degrees or 360 degrees in white (clear lens) and yellow for the runway, and red and green for threshold, displaced thresholds and, stopway applications.

The mounting column is available in three lengths. Refer to Table 1.

NOTE: The measurements in Table 1 are taken from the grade to the top of the light fixture.

Table 1: Mounting Heights

Type	Height (in.)	Height (mm)
Standard (FAA minimum)	14	355.6
Standard	24	610
Standard (FAA maximum)	30	762

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The fixture includes a cast aluminum head and base assembly that mounts on a standard L-867 base plate or on a steel stake. Base mounting is easier to maintain and provides added protection for the equipment. Stake-mounted lights require transformers, cables, and connectors that are designed for direct earth burial.

2.2.1 L-862 Runway Edge Light Fixture: Required Equipment

Refer to Table 2 for required equipment that is supplied. Refer to Table 3 for required equipment that is not supplied. Refer to the *Parts* section for ordering information.

Table 2: Required Equipment Supplied

Description	Quantity
L-862 / L-862E light fixtures (includes lamp, column, frangible fitting, and L-823 cordset)	1
Instruction manual	1

Table 3: Required Equipment Not Supplied

Description	Quantity
Torque wrench (0-200 in-lb) (0-22.6 Nt-m)	1
Loctite Grade AV or equivalent	As Required
L-867 base plate assembly (used only when base mounted)	1
Stake assembly (30-inch (762 mm) galvanized steel) (used only when stake mounted)	1
L-828 regulator (6.6 A or 20 A)	1
L-830 isolation transformer for series circuit. Refer to Table 4 for the appropriate transformer.	1

Table 4: Isolation Transformers

For a...	When you use this lamp...	Then use this isolation transformer...
6.6 A series circuit	120 W	100 W 6.6/6.6
	150 W	150 W 6.6/6.6
	200 W	200 W 6.6/6.6
20 A series circuit	120 W	100 W 20/6.6
	150 W	150 W 20/6.6
	200 W	200 W 20/6.6

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2.2.2 Specifications

2.2.2.1 Compliance with Standards

FAA: L-862 AC 150/5345-46 (Current Edition)
ETL Certified

2.2.2.2 Uses

L-862 (ETL Certified)

- — Runway edge
- — Precision IFR runways

L-862E

- — Runway threshold/end
- — Precision IFR runways

L-862 quartz high-intensity elevated edge light fixtures are used to delineate the edges of precision instrument runways.

2.2.2.3 Features

- Unique design integrates the clear outer lens and the two inner lenses into a single upper assembly, permitting rapid lamp changes
- Lens cap overhangs the base and is fastened to the base by two wing screws, providing a moisture-resistant seal that is impervious to water and eliminates the use and replacement of clamp bands and gaskets
- Lamp Life: Rated at 500 hours at 6.6 A
- Three screws allow a 4° leveling adjustment of the fixture after installation
- A ball joint in the base of the fixture allows easy and accurate elevation and azimuth positioning after installation
- Fixture uses aluminum castings, stainless steel hardware, and is protected with aviation yellow gloss enamel paint

2.2.2.4 Wind

Velocities up to 300 mph (480 kph)

2.2.2.5 Altitude

Sea level to 10,000 feet (3000 m)

2.2.2.6 Operating Conditions

Temperature: -40 °F to +131 °F (-40 °C to +55 °C)

Wind: Withstands wind velocities up to 300 mph (480 kph)

2.2.3 Photometric Data

This subsection provides the following photometric data for the L-862 light fixtures: minimum beam coverage, minimum average intensity, and lamp current and percent brightness.

2.2.3.1 Lamp

120 W /6.6 A

150 W 6.6 A and 200 W 6.6 A

2.2.3.2 Minimum Beam Coverage L-862

–2 to +9 degrees horizontal

+0 to +7 degrees vertical

2.2.3.3 Minimum Beam Coverage L-862E

RED -/+6 degrees horizontal and 2 to 4.7 degrees vertical

Green -2 to 9 degrees horizontal and 1 to 10 degrees vertical

2.2.3.4 Minimum Average Intensity

Refer to Table 5 for minimum average intensity of 120 W lamps.

Table 5: Minimum Average Lamp Intensity

Color	Lamp Current	Minimum Average Intensity (Candelas)
White	6.6 A	10, 000
Yellow	6.6 A	5,000
Green	6.6 A	2,500
Red	6.6 A	2,000

2.2.3.5 Lamp Current and Percent Brightness

Table 6: Lamp Current and Percent Brightness

Lamp Current (Amperes)	Percent Brightness
6.6	100
5.2	25

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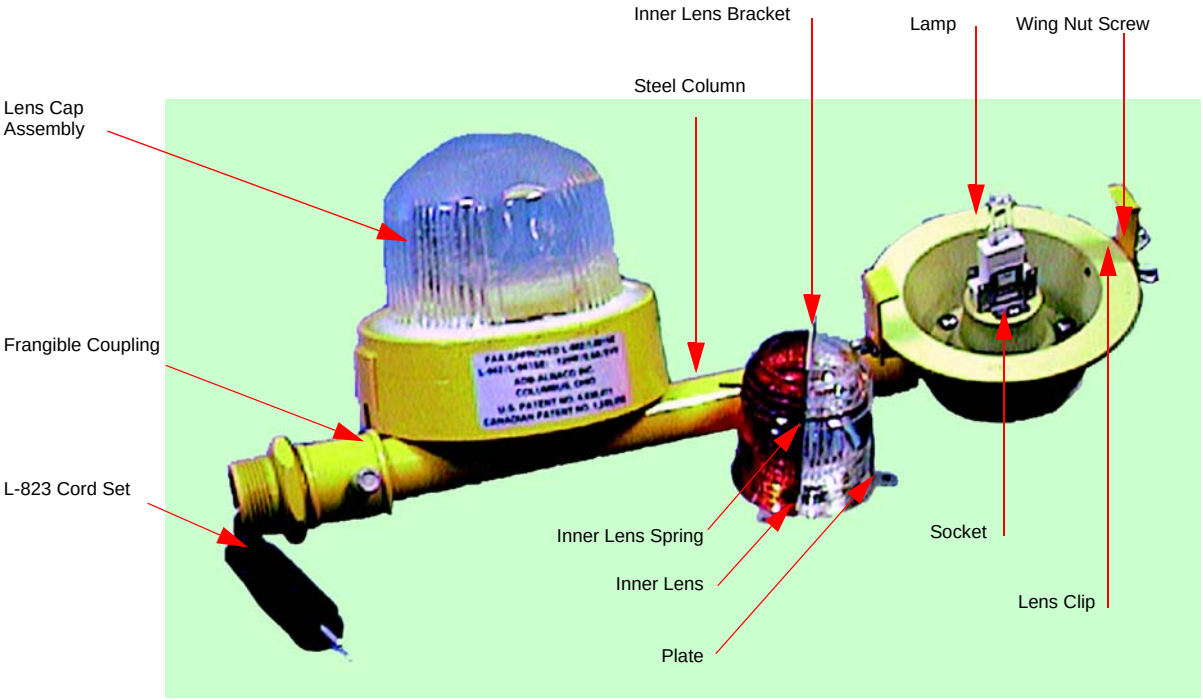
4.1	5
3.4	1.2
2.8	0.15

Figure 2: L-862 Assembly



2.2.3.6 Packaging

Table 7: Dimensions and weight

Assembled Fixtures	Dimensions of Cartons Individual or 9 Per Box		Indiv. Weight
14-inch OAH	6.5 x 6.5 x 20.5 in	19.5 x 19.5 x 20.5 in	5 lb
	17 x 17 x 52 cm	50 x 50 x 52 cm	2.3 kg
24-inch OAH	6.5 x 6.5 x 31 in	19.5 x 19.5 x 31 in	6.25 lb
	17 x 17 x 79 cm	50 x 50 x 79 cm	2.8 kg
30-inch OAH	6.5 x 6.5 x 37 in	19.5 x 19.5 x 37 in	7 lb
	17 x 17 x 94 cm	50 x 50 x 94 cm	3.2 kg

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2.3 Pre-Installation

Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

This section provides instructions for installing the L-862 light fixture. Refer to the airport project plans and specifications for the specific installation instructions.

2.3.1 Unpacking

The equipment is shipped ready for installation. Handle equipment very carefully to prevent component damage. Unpack the carton upon receipt and check the contents and their condition. Note any exterior damage to the carton that might lead to detection of equipment damage.

If you note any damage to any equipment, file a claim with the carrier immediately. The carrier may need to inspect the equipment.

2.3.2 Assembly Instructions

This subsection describes procedures for assembling the L-862 runway edge light.

NOTE: Check the packing list with the parts list to verify that all parts are present before proceeding. Refer to the *Parts* section.

WARNING

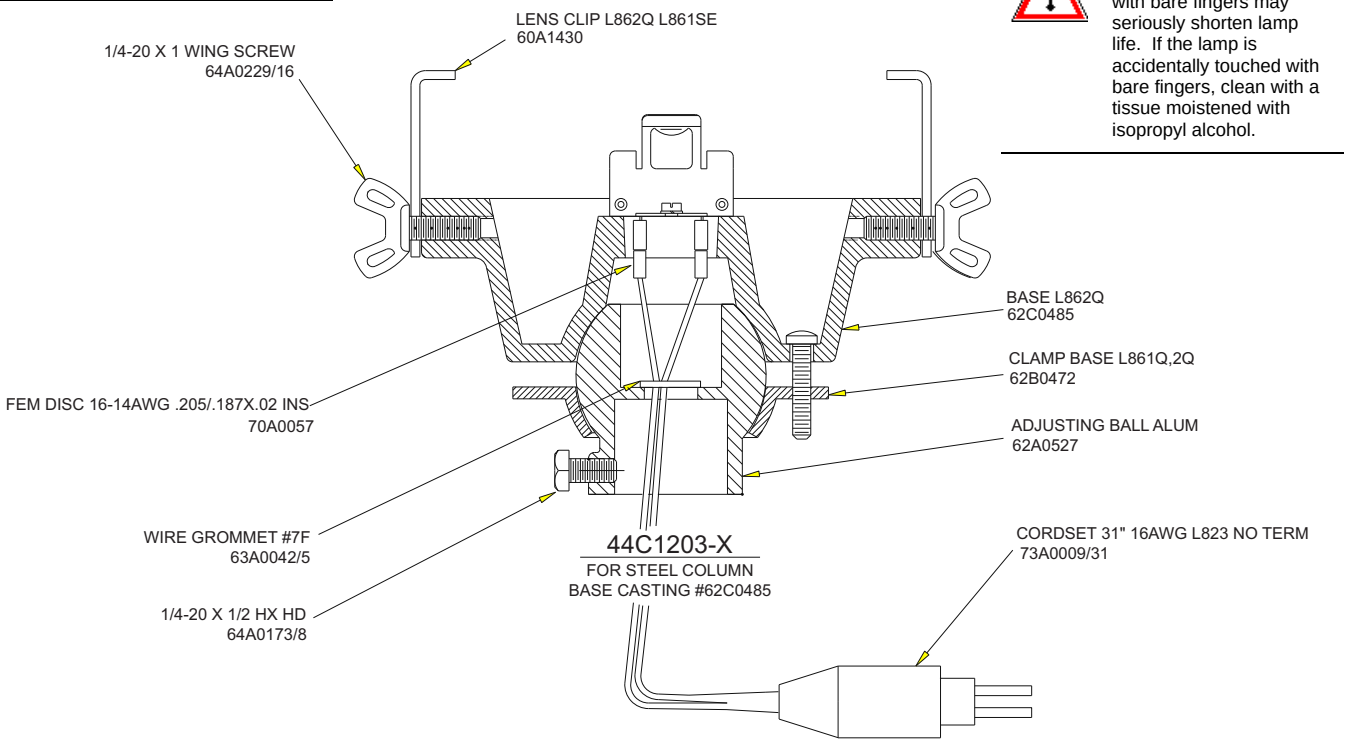
Do not install lamp and lens assembly until you have mounted the fixture on a stake or base plate for the L-867 base. If you do not mount the fixture first, you may twist the cordset off the socket or break the socket prongs. Refer to Base Mounting and Stake Mounting in this section.

1. See Figure 2. Place the L-823 cordset (7) into the column (8).
2. See Figure 3. Insert the column into the end of the ball joint (3). Lock the ball joint onto the column by tightening the 1/4-20 hex head cap screw (5) after applying Loctite to the cap screw.

Figure 3: L-862 Head Assembly

WARNING

Touching quartz lamps with bare fingers may seriously shorten lamp life. If the lamp is accidentally touched with bare fingers, clean with a tissue moistened with isopropyl alcohol.



3. See Figure 2. Insert the end of the column into the frangible coupling (6) and secure by tightening.
4. See Figure 3. Insert the lamp into the socket (1). Refer to *Lamp Replacement* in the *Repair* section.
5. See Figure 2. Place the lens assembly (1) on the base (9) and secure by tightening the two wing screws (3).

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2.4 Installation

This subsection provides installation instructions for L-862 and L-862E light fixtures.

2.4.1 Placement

Follow the guidelines below.

- The L-862 light fixtures are located 2–10 feet (.61–3.048 m) from the edge of the full strength pavement runway and in a straight line on each side of the runway.
- The fixtures are spaced longitudinally not more than 200 feet (61 m) apart on a line such that the light units on opposite sides of the runway are perpendicular to the runway centerline.

2.4.2 L-862 Base Mounting

The L-862 light fixture can be mounted on an L-867 base mated with a base plate with a diameter and bolt-hole circle corresponding to either a 12-inch (304.8-mm) or 16-inch (406.4-mm) L-867 base. The base plate has a female thread to receive a frangible coupling. A gasket is used with the base plate to form a watertight seal between the base plate and the L-867 base.

NOTE: Install the base according to appropriate FAA specifications.

To install the base, perform the following procedure:

1. See Figure 4. Install the L-867 base (2) on undisturbed soil. If the soil is unsuitable, remove soil to an adequate depth and replace with compacted acceptable material.

   NOTE: In closed duct systems, install in soil conditions with good drainage. Use light bases having a drain hole to prevent water accumulation.
2. Orient the cable entrance hubs of the base in the proper directions.
3. Level the light base so that the mounting flange surface is level with the finished grade.
4. With the base at the proper orientation and held at proper elevation, place approximately 4 inches (101.6 mm) of concrete backfill (7) around the outside base.

   NOTE: If the concrete backfill is omitted, the earth backfill must be compacted to maintain proper elevation and orientation of the base.
5. Slope the top of the concrete away from the flange portion of the base so the sloped outer edges of the concrete are at surface grade.

2.4.3 L-862E Base Mounting

The L-862 edge light fixtures are located 2 10 feet (.61 3.048 m) from the edge of the full strength pavement runway and in a straight line on each side of the runway. The fixtures are spaced longitudinally not more than 200 feet (61 m) apart on a line such that the light units on opposite sides of the runway are perpendicular to the runway centerline. Refer to FAA Advisory Circular AC 150/5340-24 for detailed installation instruction.

See Figure 4. The L-862E light fixtures can be mounted on an L-867 base (2) mated with a base plate (1) with a diameter and bolt-hole circle corresponding to either a 12-inch (304.8-mm) or 16-inch (406.4-mm) L-867 base. The base plate has a female thread to receive a frangible coupling. A gasket is used with the base plate to form a watertight seal between the base plate and the L-867 base.

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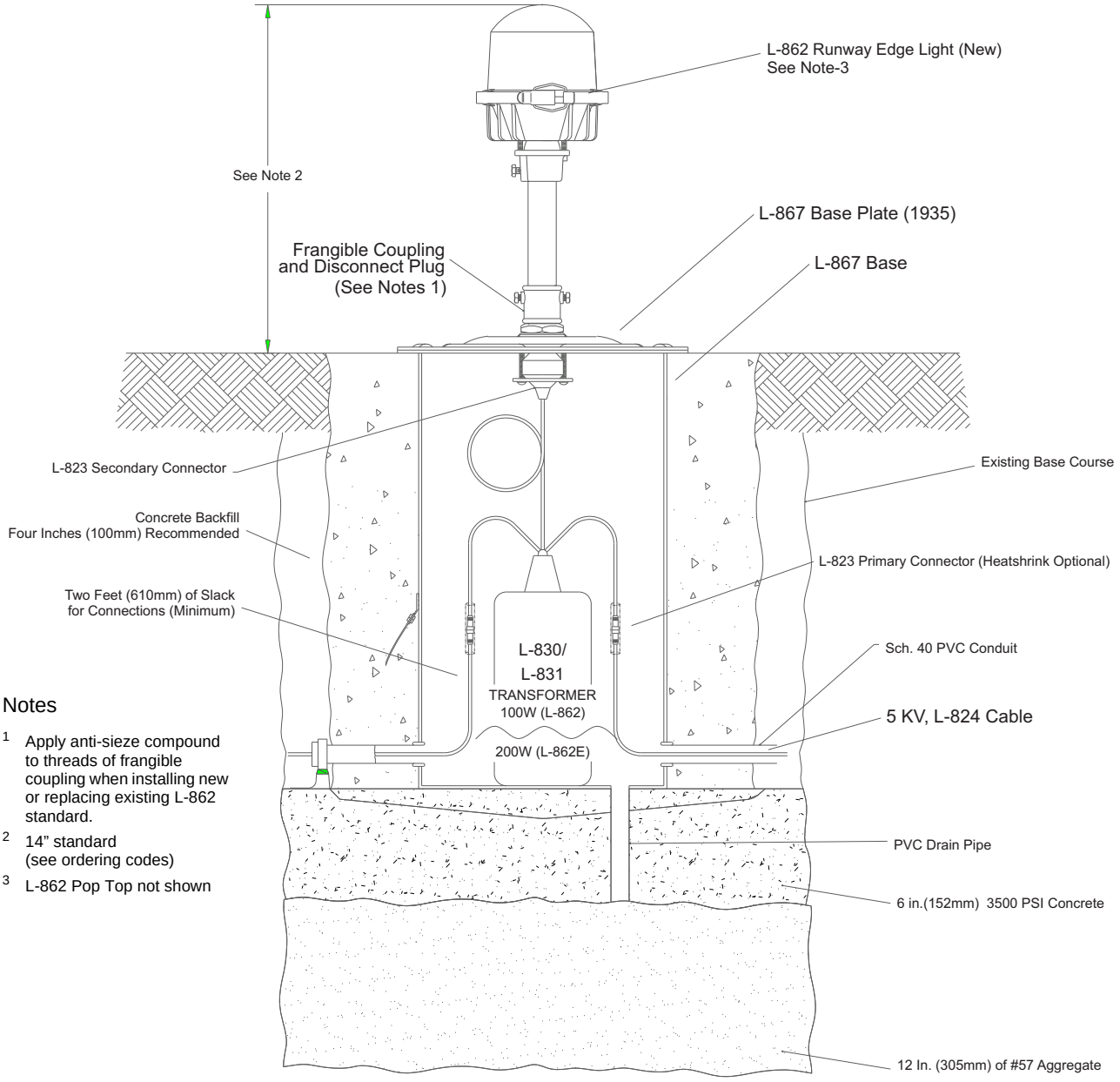
Figure 4: Installation Diagram



Notes

1. Apply anti-sieze compound to threads of frangible coupling when installing new or replacing existing L-862 standard.
2. 14" standard (see ordering codes)
3. L-862 Pop Top not shown

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2.4.4 Light Fixture Mounting

To install the light fixture on the base, perform the following procedure:

1. See Figure 4. Connect the primary power line to the appropriate isolation transformer. Refer to Table 4.

   NOTE: Use a brick to raise the isolation transformer so that it is about 3 inches (76.2 mm) above the bottom surface of the L-867 base to avoid the possibility of the transformer being partially immersed in water in case water accumulates under the level of the ducts or pipes.

2. After you have connected the transformer, check the continuity of the series loop.
3. Wrap the connector joints in the primary circuit with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape one-half lapped, extending at least 1 1/2 inches (3.81 cm) on each side of the joint.
4. Clamp the female secondary plug from the L-830 transformer to the L-867 base plate fitting.
5. Bolt the base plate (1) with the base plate gasket to the L-867 base using six 3/8 16 stainless steel bolts. Apply a drop of Loctite Grade AV to each bolt thread and use a torque wrench to torque the bolts to 100 in-lb (11.3 Nt-m).
6. Connect the male L-823 plug (3) from the light fixture to the female transformer plug on the secondary lead of the L-830 transformer.
7. See Figure 2. Loosen the frangible coupling screw (5) holding the coupling (6) to the light fixture column (8). Screw the coupling into the female thread on the base plate.

   NOTE: Apply anti-seize compound to the coupling threads to improve coupling removal and prevent thread corrosion.

8. Install the column with light fixture attached on the frangible coupling and tighten the coupling screw.
9. See Figure 2. Place the lens (1) on the fixture, and check for proper light fixture orientation and inner lens (2) color direction.

   NOTE: See Figure 5. Refer to the guidelines below for light fixture orientation.

   — "The light fixture is designed to be toed 3.5 degrees toward the runway centerline.
   — "The arrows (1) on top of the clear lens (2) must point to the runway side for proper orientation.
   — "Fixtures having different color inner lens segments must have the lens segments on the correct side of the fixture for the proper color direction.
   — "Always make sure that the colored lens location is in compliance with the airport project plans and specifications.

10. See Figure 3. If the colored lens location is not in compliance with airport project plans and specifications, loosen the three pan head screws (2) and turn the base of the light fixture to proper orientation and tighten the three pan head screws. To change the colored-lens direction, refer to Inner Lens Removal in the Repair section.
11. Use the ADB Airfield Solutions leveling and aiming device to level the fixture. Refer to Leveling and Aiming Light Fixture in this section.

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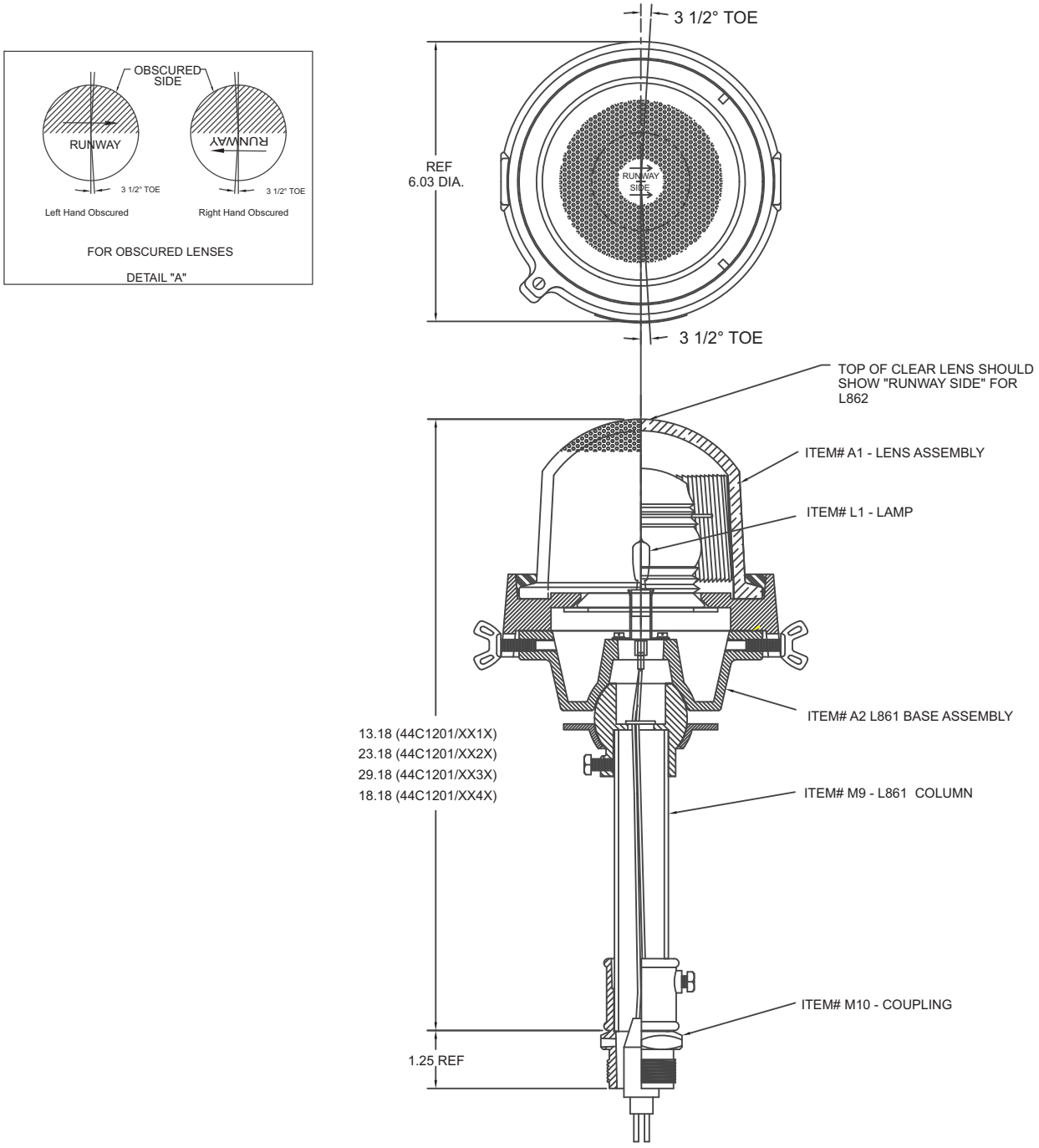
Figure 5: Assembly Direction



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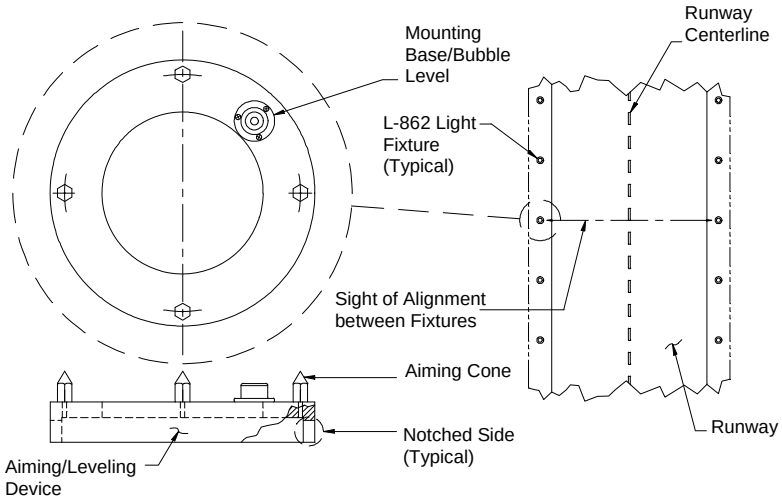
2.4.4.1 Leveling and Aiming Light Fixture

See Figure 6. This device is used to level the light fixture as well as assist in orienting the lamp and lenses in proper relationship to the runway centerline. Refer to the Parts section for ordering information. Refer to Level and Aiming Device Installation in this section to install the leveling device.

Figure 6: Leveling and Aiming Device



To level the L-862 fixture, perform the following procedure:

1. See Figure 2. Remove the lens assembly (1).
2. See Figure 3. Place the leveling device on the top of the head assembly by placing the two notched sides of the leveling device over the wing screws (6) on the head assembly. If the wing screws do not allow the device to sit level on the base flange, adjust outwardly until the leveling device seats against the base flange.

   NOTE: Do not remove the wing screws. You may lose the wing screws.
3. See Figure 6. Insert the screwdriver into the three holes in the leveling device and loosen the three locking screws. Using the two aiming cones (2) that are parallel to the wing screws, check the alignment between fixtures. Tighten the three locking screws.
4. Observing the circular bubble level (1), loosen the three locking screws and adjust the head base accordingly until the base is level. Once the head assembly is level, retighten the three screws.
5. Reinstall the lens assembly and check the installation to ensure proper alignment of the light fixture. Refer to Assembly Instructions in this section.
6. Tighten the three pan head screws when leveling is completed. Double check the leveling.

   NOTE: If you must start over again, loosen the three pan head screws and repeat steps 3 and 4.
7. Replace the lens.

2.4.4.2 Stake Mounting

This section describes how to assemble and mount the stake.

Stake Assembly

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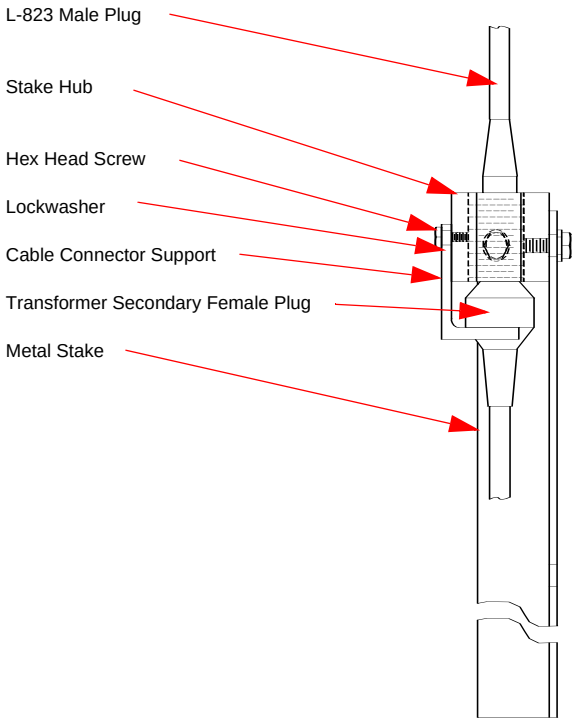
To assemble the stake, perform the following procedure:

1. See Figure 8. Attach the stake hub (2) to the metal stake (5) using two 3/8 16 x 3/4-in. hex head screws (3) and 3/8-in. lockwashers (4).

Figure 7: Stake Mount Assembly



2. Insert female transformer secondary connector (6) in cable connector support's forked tine (7) and attach the cable connector support to the stake hub (2) using 1/4 20 x 3/4-in. hex head screw (8) and 1/4-in. split lockwasher (9).
3. The small hole at the lower end of the stake is provided for counterpoise wire connection.

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2.4.4.3 Stake Installation

WARNING

Do not drive stakes. Driving stakes may damage the stake and cause light fixture misalignment. Refer to FAA specification AC 150/5340-24.

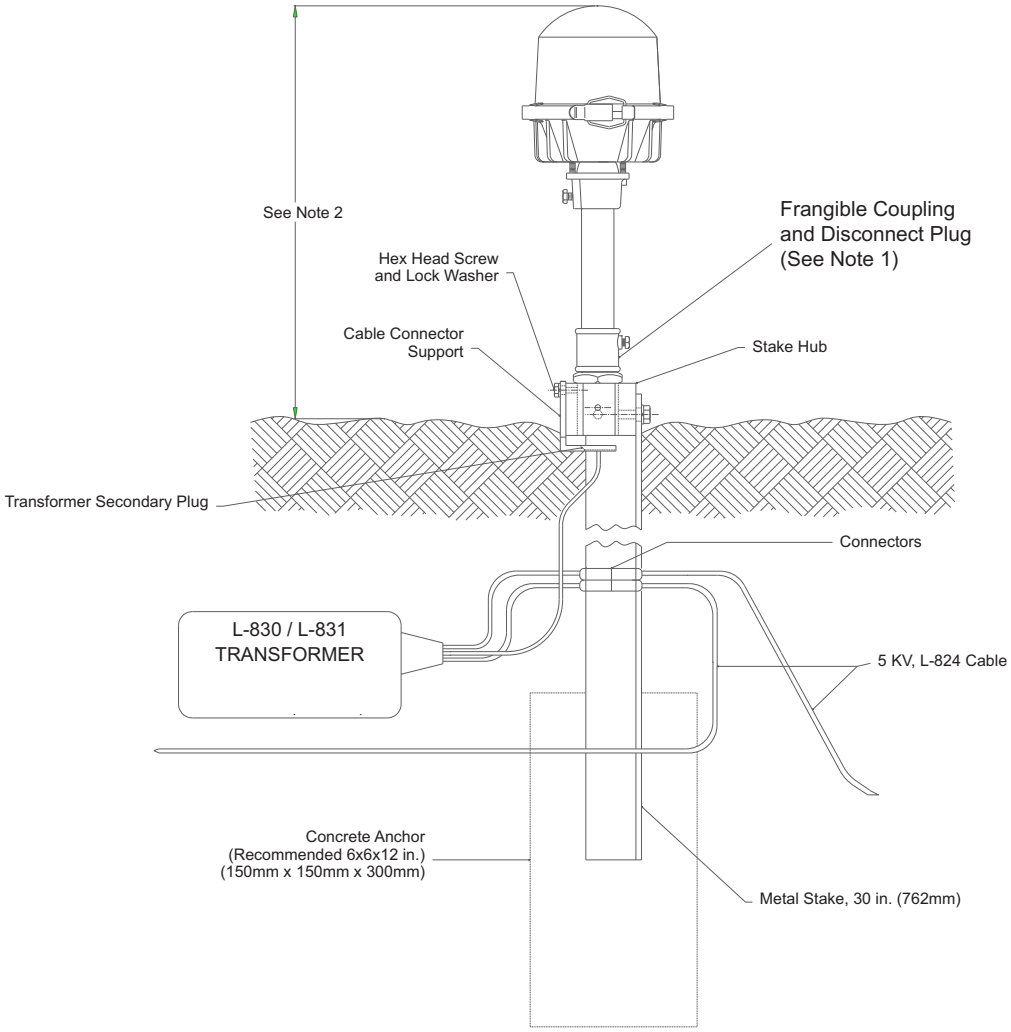
To install a stake, perform the following procedure:

1. See Figure 8. Install the stake in 6-inch- (152.4-mm-) diameter holes at a depth of 30 inches (762 mm) so that the mounting hub of the stake is level.
2. Make electrical connections as required and backfill around the stake with compacted earth passing a 1-inch (25.4 mm) sieve.

   NOTE: Use a bubble level or carpenter's level to ensure the stake is vertical before backfilling around stake. Backfill with concrete in case of unstable soil conditions.
3. Install the top of the stake even with ground level and maintain within one degree of the vertical.

   NOTE: In areas where frost may cause heaving, anchor the stake with concrete and use a permeable backfill material such as sand around the buried electrical components. Cover the top surface with an impervious material to reduce moisture penetration.

Figure 8: Stake Mounting Example



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2.5 Maintenance

To keep L-862/L-862E light fixtures operating efficiently, follow a preventive maintenance schedule. Refer to Table 8. Refer to FAA AC 150/5340-26 for more detailed information.

Table 8: L-862 Light Fixture Maintenance

Interval	Maintenance Task	Action
Daily	Check for burned out lamp.	After turning off power, replace burned-out lamps. Refer to the *Repair* section.
	Check for dim lamp.	After turning off power, replace burned-out lamps. Refer to the *Repair* section.
	Check for broken lens.	Replace lens cap or lens cap assembly.
Weekly	Check for vegetation.	Remove vegetation. Use weed killer.
	Check for dirty lens.	Clean with glass cleaner.
Monthly	Check for misaligned fixture.	Straighten, level, and align fixture.
	Check for dirty lamp socket.	After turning off power, clean lamp socket.
	Check for dirt on fixture drain holes.	Clean drain holes.
Semi-Annually	Check for improper ground elevation.	Grade so frangible point is approximately 1 inch above ground elevation.
	Check for improper light elevation.	Maintain the same elevation for all light fixtures.
	Check for moisture present in light housing or on L-867 base.	Check drain holes and wing screws for dirt. Clean drain holes and wing screws, if necessary. Check lens for cracks. If damaged, replace. Use water pump to remove water from the base.
	Check for corrosion or loose or chipped paint.	Scrape and repaint.
Annually	Check for cracks, corrosion, and shorts.	Repair or replace.
	Check for dirty contacts.	After turning off the power, clean contacts.
	Check for loose wire connections.	Tighten wire connections.
Unscheduled	Make prediction of heavy snowfall, if necessary.	Use red flags or sticks to mark the location of fixtures to facilitate snow removal and lessen the chance of damage to fixtures by snow removal equipment.

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2.6 Troubleshooting

WARNING

Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

De-energize the circuit and lock out the circuit or regulator so that the circuit cannot be energized by remote means before attempting to service the fixture.

This section contains troubleshooting information. This information covers only the most common problems that you may encounter. If you cannot solve the problem with the information given here, contact your local ADB Airfield Solutions Service Department personnel for help.

Problem	Possible Cause	Corrective Action
Lamps will not turn on	Defective lamp	Replace lamp. Refer to the *Repair* section.
	Loose wire connection(s)	Tighten wire connection(s).
	Deteriorated wire insulation	Replace wires.
	Moisture present in fixture	Open up and dry. Inspect lens cap for cracks. Replace lamp and any damaged parts. Refer to the *Repair* section.

2.6.1 Repair

WARNING

Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

This section provides instructions for replacing lamps and inner lenses for the L-862 light fixture.

2.6.1.1 Lamp Replacement

WARNING

De-energize the circuit and lock out the circuit or regulator so that the circuit cannot be energized by remote means before attempting to service the fixture.

To replace a lamp, perform the following procedure:

1. See Figure 2. Remove the lens assembly (1) from the fixture by loosening the two wing screws (3) holding the lens cap to the base (9).
2. Pull the lamp (10) from the socket.
3. Wearing clean, lint-free gloves, insert the new lamp into the lamp socket.

WARNING

Touching quartz lamps with bare fingers may seriously shorten lamp life. If the quartz lamp has been touched, clean the lamp with tissue moistened with isopropyl alcohol.

4. Reinstall the lens and tighten the two wing screws

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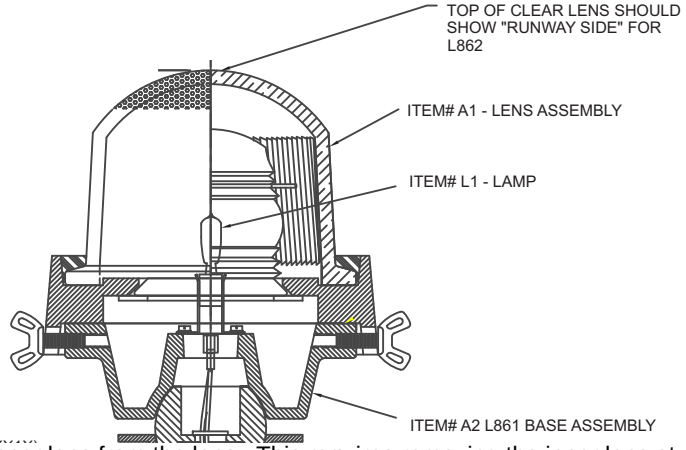
2.6.1.2 Inner Lens Replacement

To replace the inner lens, perform the following procedure:

1. See Figure 3. Remove the lens (1) from the light fixture by loosening the two wing screws (3) holding the lens to the base (9).
2. See Figure 9. Remove the three pan head screws (7) and lockwashers (8) on the inner lens retainer (6) while holding the inner lens (4) to the lens cap (5).

Figure 9: Lens Assembly

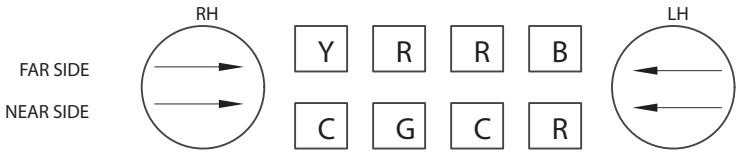


3. Pull out the inner lens from the lens. This requires removing the inner lens at an angle to clear the hole of the lens.
4. Remove the inner lens spring clip (3). The lens segments can now be removed from the lens bracket (2) and interchanged or replaced.
5. Reverse the removal procedure to install the inner lens into the lens.

   NOTE: When installing the new inner lens for fixtures with two different colored inner segments (for example, clear-yellow or green-red), make sure that the inner colored lenses are installed correctly in relationship to the arrows that are molded into the top surface of the clear outer glassware. Fifty percent of the fixtures should be assembled for left-hand field installation and fifty percent for right-hand field installation. View the final assembly from the top of the cover assembly and determine the correct location of the colored inner segments per the diagram in Figure 10.

   NOTE: In Figure 10, FAR SIDE refers to the inner lenses farthest from you. NEAR SIDE refers to the inner lens nearest to you. If the sales order is for an odd number of assemblies, contact the Sales Department to confirm if fixtures are to be left-hand or right-hand.

Figure 10: Inner Lens Orientation



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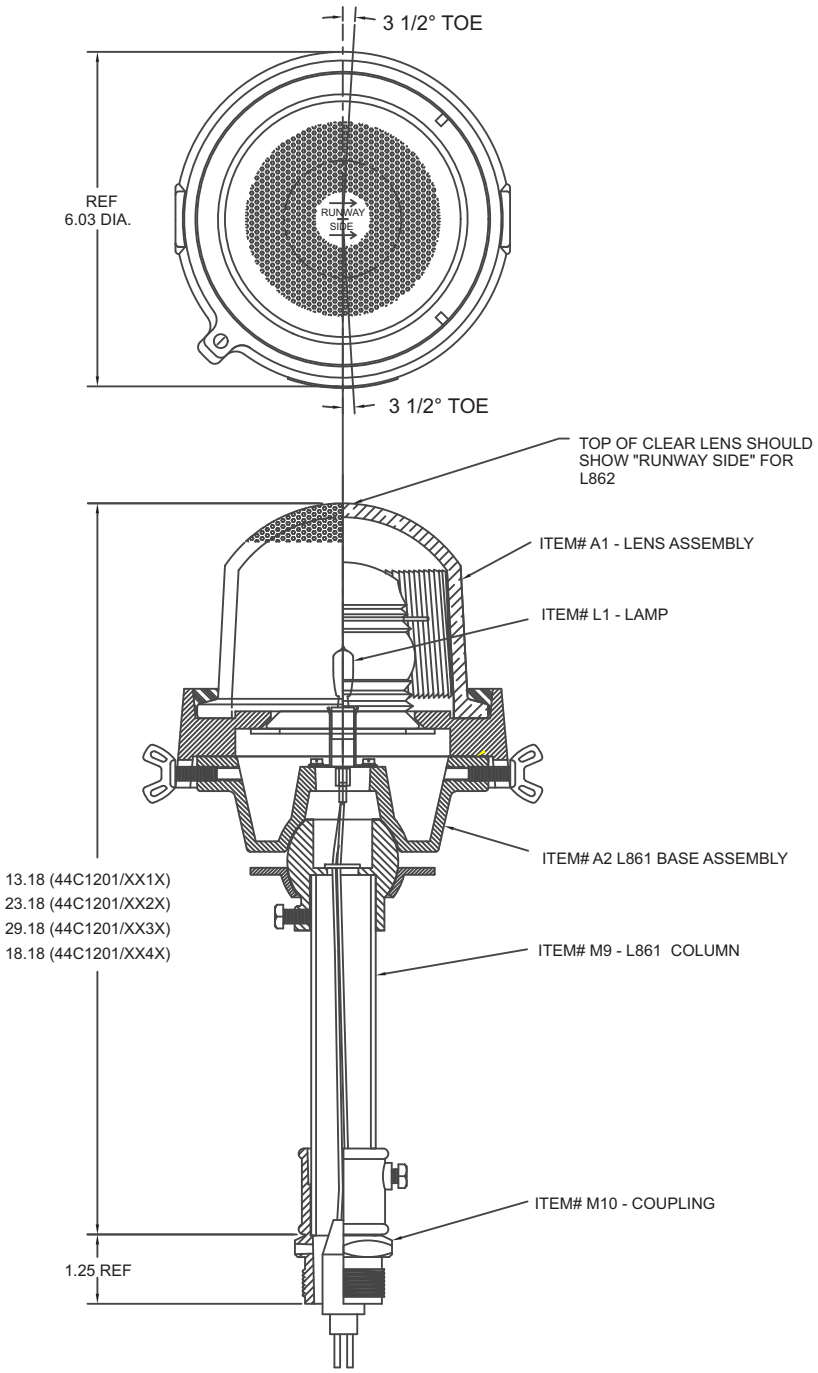
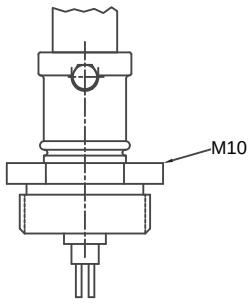
2.7 Parts

To order parts, call ADB Airfield Solutions Customer Service or your local representative. Use this five-column parts list, and the accompanying illustration, to describe and locate parts correctly.

Figure 11: L-862 and L-862E Parts





(FOR 2" COUPLING ONLY)

The following table cover the Item Numbers listed.

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Figure 12: Item # A1 Lens Assembly

ITEM# A1 - LENS ASSEMBLY

ASSY NO.	PART NO.	PART NAME/DESCRIPTION
44C1201/X1X1	44C1202/1	LENS ASSEMBLY CLEAR 180dg L862Q
44C1201/X2X1	44C1202/2	LENS ASSEMBLY CLEAR/YELLOW L862Q
44C1201/X9X1	44C1202/3	LENS ASSEMBLY CLEAR/RED L862Q
	44C1202/4	LENS ASSEMBLY CLEAR/GREEN L862Q
44C1201/X7X1	44C1202/5	LENS ASSEMBLY YELLOW/RED L862Q
44C1201/X6X1	44C1202/6	LENS ASSEMBLY RED/GREEN L862Q
44C1201/X3X1	44C1202/7	LENS ASSEMBLY RED/RED L862Q
44C1201/X8X1	44C1202/8	LENS ASSEMBLY GREEN/YELLOW L862Q
44C1201/X5X2	44C1202/9	LENS ASSEMBLY GREEN/OBSCURE LH L862Q
44C1201/X5X3	44C1202/10	LENS ASSEMBLY GREEN/OBSCURE RH L862Q
44C1201/X3X2	44C1202/11	LENS ASSEMBLY RED/OBSCURE LH L862Q
44C1201/X3X3	44C1202/12	LENS ASSEMBLY RED/OBSCURE RH L862Q
44C1201/X1X2	44C1202/13	LENS ASSEMBLY CLEAR/OBSCURE LH L862Q
44C1201/X1X3	44C1202/14	LENS ASSEMBLY CLEAR/OBSCURE RH L862Q
44C1201/X2X2	44C1202/15	LENS ASSEMBLY YELLOW/OBSCURE LH L862Q
44C1201/X2X3	44C1202/16	LENS ASSEMBLY YELLOW/OBSCURE RH L862Q
44C1201/X1X4	44C1202/17	LENS ASSEMBLY RED/GREEN RH L862Q
44C1201/X1X5	44C1202/18	LENS ASSEMBLY RED/GREEN LH L862Q
44C1201/X4X1	44C1202/19	LENS ASSEMBLY YELLOW/YELLOW L862Q
44C1201/X1X6	44C1202/20	LENS ASSEMBLY GREEN/OBSCURE RH L862Q
44C1201/X1X7	44C1202/21	LENS ASSEMBLY GREEN/OBSCURE LH L862Q
44C1201/X1X8	44C1202/22	LENS ASSEMBLY RED L862Q
44C1201/X1X9	44C1202/23	LENS ASSEMBLY RED/OBSCURE LH L862Q
44C1201/X1X0	44C1202/24	LENS ASSEMBLY RED/OBSCURE RH L862Q
44C1201/X1XA	44C1202/25	LENS ASSEMBLY YELLOW/GREEN RH L862Q
44C1201/X1XB	44C1202/26	LENS ASSEMBLY YELLOW/GREEN LH L862Q

Figure 13: Item #2 and M9 Base Assembly and Column

ITEM# A2 AND M9 - L861 BASE ASSEMBLY AND COLUMN

ASSY NO.	HEAD ASSY NO.	PART NAME/DESCRIPTION	COLUMN NO.	PART DESCRIPTION
44C1201/XX1X	44C1203/1	HEAD ASSEMBLY W/ 15" CORDSET	62A0007/8	COLUMN, 6.5 LG.
44C1201/XX2X	44C1203/2	HEAD ASSEMBLY W/ 25" CORDSET	62A0007/18	COLUMN, 16.5 LG.
44C1201/XX3X	44C1203/3	HEAD ASSEMBLY W/ 31" CORDSET	62A0007/24	COLUMN, 22.5 LG.
44C1201/XX4X	44C1203/2	HEAD ASSEMBLY W/ 25" CORDSET	62A0007/11.5	COLUMN, 11.5 LG.
44C1201/XX5X	44C1203/1	HEAD ASSEMBLY W/ 15" CORDSET	62A0007/8	COLUMN, 6.5 LG.
44C1201/XX6X	44C1203/2	HEAD ASSEMBLY W/ 25" CORDSET	62A0007/18	COLUMN, 16.5 LG.
44C1201/XX7X	44C1203/3	HEAD ASSEMBLY W/ 31" CORDSET	62A0007/24	COLUMN, 22.5 LG.
44C1201/XX8X	44C1203/2	HEAD ASSEMBLY W/ 25" CORDSET	62A0007/11.5	COLUMN, 11.5 LG.

Figure 14: Item #L1 Lamp

ITEM# L1 - LAMP

ASSY NO.	PART NUMBER	PART NAME/DESCRIPTION
44C1201/1XXX	48A0069	120W QUARTZ, 6.6A
44C1201/2XXX	48A0044	150W QUARTZ, 6.6A
44C1201/4XXX	48A0145	200W QUARTZ, 6.6A NOTE 4

Item # M10 Coupling

ITEM# M10 - COUPLING

ASSY NO.	PART NUMBER	PART NAME/DESCRIPTION
44C1201/XX1X	62B0073	COLUMN,6.5" LG., 1-1/2" COUPLING
44C1201/XX2X	62B0073	COLUMN, 16.5" LG., 1-1/2" COUPLING
44C1201/XX3X	62B0073	COLUMN, 22.5" LG., 1-1/2" COUPLING
44C1201/XX4X	62B0073	COLUMN,11.5" LG., 1-1/2" COUPLING
44C1201/XX5X	61A0281	COLUMN, 6.5" LG., 2" COUPLING
44C1201/XX6X	61A0281	COLUMN, 16.5" LG., 2" COUPLING
44C1201/XX7X	61A0281	COLUMN, 22.5" LG., 2" COUPLING
44C1201/XX8X	61A0281	COLUMN, 11.5" LG., 2" COUPLING
44C1201/XX9X	61A0350	COLUMN, 6.5" LG., 2"11 (EURO) COUPLING
44C1201/XXAX	61A0350	COLUMN, 16.5" LG., 2"11 (EURO) COUPLING
44C1201/XXBX	61A0350	COLUMN, 22.5" LG., 2"11 (EURO) COUPLING
44C1201/XXCX	61A0350	COLUMN, 11.5" LG., 2"11 (EURO) COUPLING

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Table 9: Spare Components

Description	Part No.
Ball joint	62A0527
Column, 6.5 in (16.51 cm) for 14-in OAH	62A0007-8
Column, 16.5 in (41.91 cm) for 24-in OAH	62A0007-18
Column, 22.5 in (57.15 cm) for 30-in OAH	62A0007-24
Elevated SS thumb screw kit	94A0592
Frangible coupling, 1.5 inch, 12 TPI	62B0073
Frangible coupling, 1.5 inch, 12 TPI, with slot[2]	62B0461
Frangible reducer coupling, 2-1 inch, 11.5 TPI	61A0281
Head assembly with cord set for 14-in OAH	44C1203-1
Head assembly with cord set for 24-in OAH	44C1203-2
Head assembly with cord set for 30-in OAH	44C1203-3
Lamp, 120 W/6.6 A (ETL Certifi ed)	48A0069
Lamp, 150 W/6.6 A[1,3]	48A0044
Lamp, 200 W/6.6 A[1,3,4]	48A0145
Lamp socket	49A0063
Lamp base	62C0485
Lens, outer white, not obscured	63B0416
Lens, outer white left hand, obscured	63B0545-1
Lens, outer white right hand, obscured	63B0545-2
Lens, outer red/green, right hand[3]	63A0601
Lens, outer red/green, left hand[3]	63A0602
Lens, inner white (ETL Certified)	63B0415-1
Lens, inner yellow (ETL Certified)	63B0415-2
Lens, inner red	63B0415-3
Lens, inner green	63B0415-4
Lens, inner bracket	61A0146
Lens, inner retainer	61B0147
Lens, inner spring clip	65A0163
Lens cap	62C0486
Lens cap assembly, inner and outer lens, white (ETL Certified)	44C1202-1
Lens cap assembly, inner lens white/yellow, outer lens white (ETL Certified)	44C1202-2
Lens cap assembly, inner lens white/red, outer lens white	44C1202-3
Lens cap assembly, inner lens red/green, outer lens white (used on 120 W only)	44C1202-6
Lens cap assembly, inner lens white, outer lens red/green, right hand[3]	44C1202-17
Lens cap assembly inner lens white, outer lens red/green, left hand[3]	44C1202-18
Outer lens cap only	44B1411-1
Lens clip	60A1430
Strain relief	63A0042-5
Wing screw	64A0229-16

1 Wattage not submitted for ETL certifi cation, but exceeds specifications for photometric requirements

2 Slot across threaded end allows easy replacement of broken frangible coupling

3 For red/green applications, inner lens must be white/white and outer lens must be red/green

4 For 200 W lamps, inner lens must be either white or yellow

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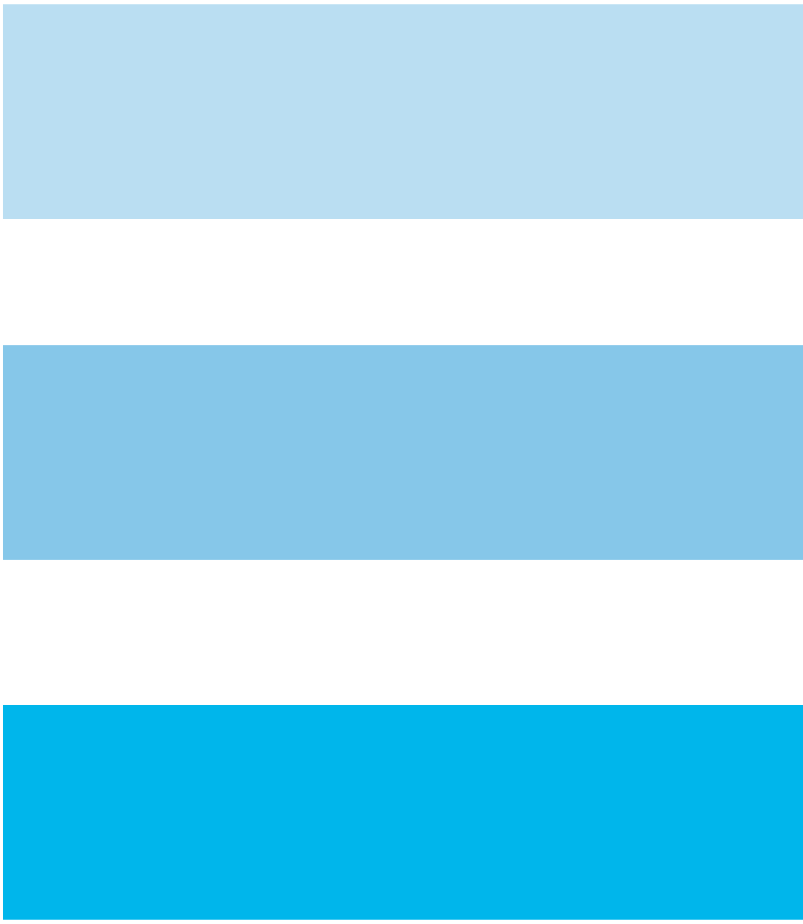

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